Forest Health Protection
Pacific Southwest Region

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To: Forest Supervisors (Eldorado, Inyo, Lassen, Plumas, Modoc, San Bernardino, Shasta-Trinity, Sierra, Stanislaus, Sequoia and Tahoe National Forests and the Lake Tahoe Basin Management Unit), Park Superintendents (Sequoia Kings Canyon and Yosemite National Parks), Field Managers (Bureau of Land Management, Eagle Lake and Alturas Field Offices), and Deputy Director (CAL FIRE Resource Management)

Subject: Douglas-fir Tussock Moth Pheromone Detection Survey 2010 Report (FHP Report NE11-01)

Enclosed are the results of the 2010 cooperative Douglas-fir tussock moth (DFTM) pheromone detection survey (Table 1). Participation in this effort includes the US Forest Service, CAL FIRE, Bureau of Land Management and the National Park Service. In summary, traps were installed in 158 plots (5 traps/plot) with 90% reporting. Ninety five percent of surveyed plots averaged < 10 males per trap. This year, two plots approached the > 25 male moths average threshold (Map 1). One plot was on the Hat Creek Ranger District, Lassen National Forest (22 moths/trap) and the other was on the Yuba River Ranger District, Tahoe National Forest (21 moths/trap). These plot locations are depicted in orange on the map. We will monitor the areas in 2011 to detect DFTM-caused defoliation.

Moth counts are slightly higher from last year's detection survey but generally very low throughout the state. In 2010, the Douglas-fir tussock moth outbreak on the San Bernardino National Forest increased the extent of the affected area by 50 acres for a total of 250 acres with defoliation (Figure 1). White fir (*Abies concolor*), was primarily defoliated but high densities of caterpillars were also observed feeding on Jeffrey pine (*Pinus jeffreyi*). The last known activity of Douglas-fir tussock moth in the San Bernardino Mountains occurred in the early 1970's.

Figure 1. Severe defoliation of white fir by the Douglas-fir Tussock Moth observed this year on the San Bernardino National Forest

When male DFTM numbers reach > 25 males per trap, follow up egg mass and/or larval density surveys are conducted to determine the probability of subsequent conifer defoliation (primarily white fir in California). This information is provided to land managers in a timely manner in order to assess the potential impacts to natural resources and facilitate any suppression strategies that may be implemented.

Increases and declines in trap counts are very common with DFTM populations. Based on the results of the 2010 trap monitoring, there should be very few, if any, areas where defoliation is detected in 2010 (except for the San Bernardino Mountains and possibly on the Yuba River and Hat Creek Ranger Districts). Forest Health Protection and/or CAL FIRE Pest Management staff will conduct additional monitoring if any defoliation is detected this summer, with affected acres being reported to the appropriate land managers. Field going personnel are urged to continue to check for evidence of feeding and defoliation on white fir throughout the susceptible host type this coming summer and fall and report any findings to your forest health contacts (Appendix A).

Sufficient trapping materials have been ordered for the detection survey plots for 2011 and will be distributed to cooperators in June or July of this year. Updates on population monitoring will be distributed to land managers as needed. Forest Health Protection appreciates the continued cooperation from all agencies in this ongoing west-wide survey effort and especially thanks the following DFTM Detection Survey cooperators:

Don Owen, CAL FIRE, Redding
Tom Smith, CAL FIRE, Davis
Jim Kral, CAL FIRE, Visalia
David Shy, CAL FIRE, Tulare
Tom Warner, NPS, Sequoia Kings Canyon
Brian Mattos, NPS, Yosemite
Wade Salverson, BLM, Susanville
Peter Hall, BLM, Alturas
Cathy Carlock, Modoc NF
Barbara Bryan, Modoc NF
Susan Wilcox, Lassen NF
Frank Howell, Lassen NF
Heidi Van Gieson, Lassen NF
Paul White, Lassen NF
Gary Cline, Tahoe NF
Kelly Hack, Tahoe NF
Teri Banka, Tahoe NF
Amber Burleigh, Tahoe, NF
Anthony Balderas, Tahoe NF
Ron Johnstone, Tahoe NF
Bill Krips, Eldorado NF
Jeff Griffin, Eldorado NF
Bob Carroll, Eldorado NF
Danee Post, Eldorado NF
Laura Cheney, Eldorado NF
Jim Junette, Stanislaus NF
Eileen Carlen, Stanislaus NF
Maria Benech, Stanislaus NF
Francey Blaugrund, Sierra NF
Dave Smith, Sierra NF
Larry Burd, Sequoia NF
George Powell, Sequoia NF
John Springer, Sequoia NF
Scott Kusumoto, Inyo NF
Rita Mustatia, LTBMU
Scott Parsons, LTBMU

Sincerely,

/s/ Amanda Grady

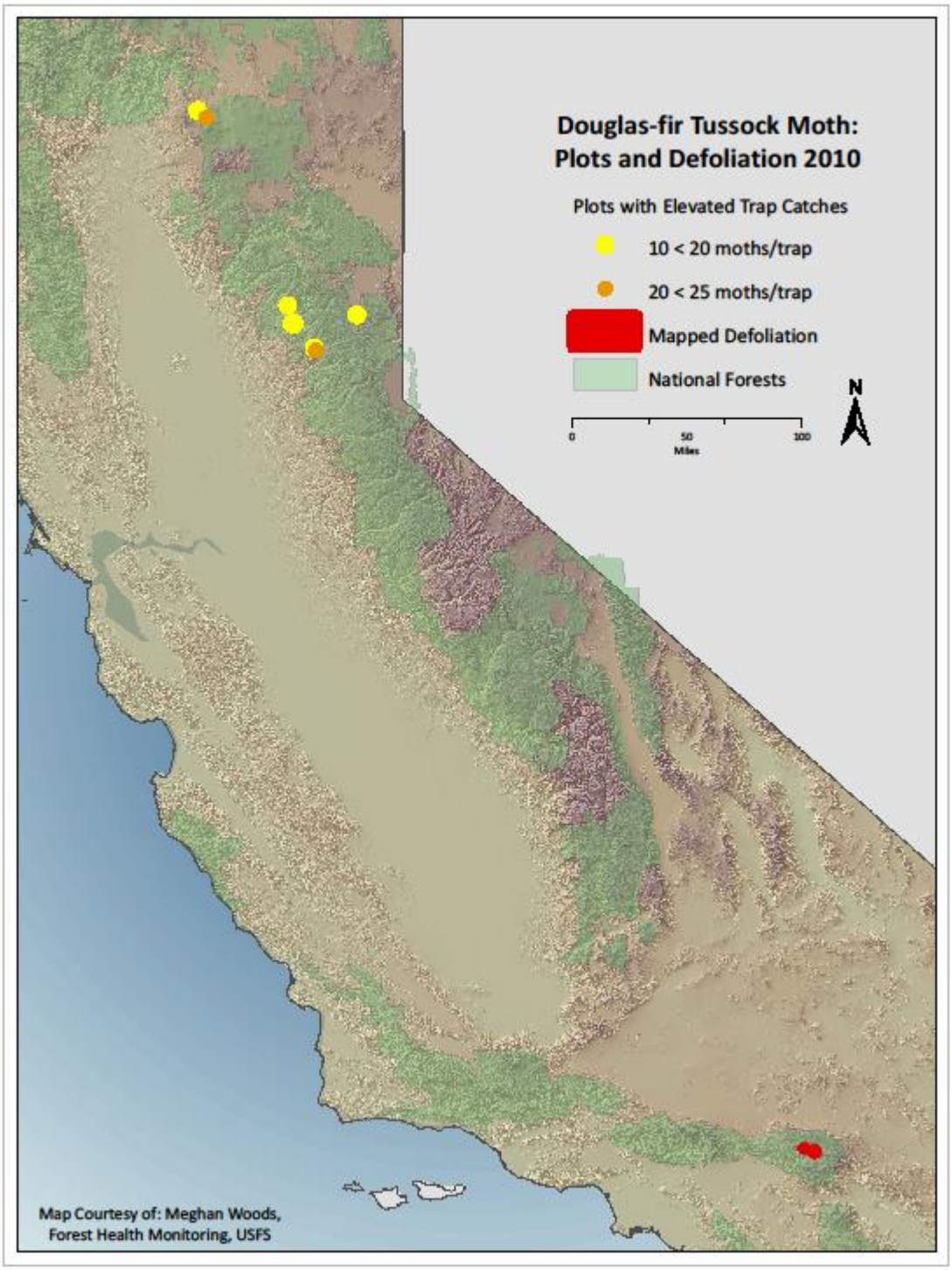
Amanda M Garcia-Grady
Entomologist
Forest Health Protection
NE CA Shared Service Area

Table 1. Number of Douglas-fir tussock moth pheromone detection survey plots by trap catch for 1997 - 2010 for California.

*some traps not counted due to weather

Year	Total # of Plots	NUMBER OF PLOTS WITH AN AVERAGE MOTH CATCH PER TRAP OF:														
		0<10	10<20	20<25	25<30	30<35	35<40	40<45	45<50	50<55	55<60	60<65	65<70	70<75	75+
1997	142	88	27	10	9	4	3	0	0	1	0	0	0	0	0
	100%	62%	19%	7%	6%	3%	2%			<1%					
1998	159	81	22	11	9	6	3	10	7	5	2	1	1	1	0
	100%	51%	14%	7%	6%	3%	2%	6%	4%	3%	<1%	<1%	<1%	<1%	
1999	159	126	20	5	3	2	2	0	0	0	1	0	0	0	0
	100%	79%	13%	3%	2%	1%	1%				1%				
2000	185	154	15	4	4	0	1	2	2	2	0	0	1	0	0
	100%	83%	8%	2%	2%		<1%	1%	1%	1%			<1%		
2001	183	95	57	13	10	6	0	1	1	0	0	0	0	0	0
	100%	52%	31%	7%	5%	3%		<1%	<1%						
2002	168	126	31	5	3	3	0	0	0	0	0	0	0	0	0
	100%	75%	18%	3%	2%	2%									
2003	163	53	42	11	11	10	14	13	3	1	4	0	1	0	0
	100%	32%	26%	7%	7%	6%	8%	8%	2%	1%	2%		1%		
2004	174	68	43	6	16	11	6	5	3	0	2	1	1	0	0
	* 93%	39%	25%	3%	9%	6%	3%	3%	2%		1%	<1%	<1%		
2005	195	139	15	11	7	4	3	2	3	1	0	0	0	1	1
	*95%	71%	8%	5%	4%	2%	2%	1%	2%	<1%				<1%	<1%
2006	164	98	26	8	8	5	3	4	3	4	2	0	1	1	1
	100%	60%	16%	5%	5%	3%	2%	2%	2%	2%	2%		<1%	<1%	<1%
2007	164	157	6	0	0	1	0	0	0	0	0	0	0	0	0
	100%	96%	4%			<1%									
2008	155	155	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	100%													
2009	147	144	3	0	0	0	0	0	0	0	0	0	0	0	0
	*93%	98%	2%												
2010	142	134	6	2	0	0	0	0	0	0	0	0	0	0	0
	*90%	95%	4%	1%											

Map 1. The 2010 Douglas-fir tussock moth (DFTM) plots with elevated trap catches (yellow and orange points) and DFTM-caused defoliation mapped over the San Bernardino NF (red polygon).



Appendix A: Forest Health Contacts

Region 5, Forest Health Protection, Service Area Contacts

Northern CA (National Forests: Klamath, Mendocino, Shasta-Trinity, Six Rivers)

Plant Pathologist: Pete Angwin
(530) 226-2436
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Entomologist: Cynthia Snyder
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Northeastern CA (National Forests: Lassen, Modoc, Plumas, Tahoe)

Plant Pathologist: Bill Woodruff
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Entomologist: Danny Cluck
530-252-6431
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Entomologist: Amanda Garcia-Grady
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South Sierra (National Forests: Eldorado, Inyo, LTBMU, Sequoia, Sierra, Stanislaus)

Plant Pathologist: Martin MacKenzie
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Entomologist: Beverly M. Bulaon
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e-mail: bbulaon@fs.fed.us

Southern CA (National Forests: Angeles, Cleveland, Los Padres, San Bernardino)

Plant Pathologist: Paul Zambino
(909) 382-2727
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Entomologist: Tom Coleman
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CAL FIRE, Forest Pest Management Contacts

Cascade and Northern Sierra:

Entomologist: Don Owen
(530) 224-2494
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North Coast:

Plant Pathologist: Jack Marshall
(707) 462-5886
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Central and Southern Sierra:

Plant Pathologist: Tom Smith
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South Coast and Southern CA:

Forest Health Specialist: Kim Camilli
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